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EXAMINER

BAKER, MAURIE GARCIA

ART UNIT

PAPER NUMBER

1639

DATE MAILED: 09/05/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/700,401**

Applicant(s)

**Maier et al**

Examiner  
**Maurie G. Baker, Ph.D.**

Art Unit  
**1639**

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jun 19, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above, claim(s) 5 and 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 13, and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☒ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

### **DETAILED ACTION**

1. The Response filed June 19, 2003 (Paper No. 15) is acknowledged. Claims 1-3, 7 and 9 were amended and no claims were cancelled or added. Therefore, claims 1-14 are pending.

2. Claims 5, 10, 11 and 12 remain withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected species, there being to allowable generic claim. Claims 1-4, 6-9, 13 and 14 are examined on the merits in this action.

#### ***Priority***

3. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 5/16/1998. It is noted, however, that applicant has still not filed a certified copy of the application as required by 35 U.S.C. 119(b). Applicant states that a certified copy will be provided separately but this has not yet been received.

#### ***Specification***

4. The Substitute Specification filed June 19, 2003 is acknowledged and has been entered. This obviates the previous objection to the specification/drawings.

***Status of Rejections***

5. The previous rejections under 35 U.S.C. 112, second paragraph are withdrawn in view of applicant's amendments. However, the remaining rejections are maintained. Applicant's arguments are addressed following each rejection. Also, new rejections, necessitated by applicant's amendments, are set forth in this action.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

7. Claims 1-4, 6-8, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Atkins et al (WO 99/19724; filing date 10/8/1998; priority 10/10/1997).

Atkins et al discloses a materials library, specifically a catalyst library and reactors for making such libraries (see Abstract). With respect to the reactors of the reference, both reactors and microreactors are disclosed; see Figures, page 3, lines 13-21 and page 4 lines 14-28 for example. The reactor structure is described, for example, on page 15, lines 11-34 and page 27, lines 15-32. This reads on the reactor structure of the instant claims 1, 2, 13 and 14. The reactor clearly has a "reaction plate" and a "removable reactor bottom plate" as required by the instant claims (see, for example, Figures 25 & 26 and accompanying text;

Figures 21 & 22 described on page 28, line 21 through page 29, line 10).

Calcination of the libraries is disclosed on page 7, lines 31-34 and in Figure 28A, for example. The reference discloses liquid phase reaction mixtures (see, page 7, lines 8-13, Fig 28A and page 28, lines 13-20, for example) and porous catalyst libraries (see, for example, page 7, lines 18-24). The microreactors of Atkins et al can be made of silica (see page 27, lines 15-32, especially lines 26-29). Lastly, the reference discloses screening of the libraries, reading on instant claim 6, see, for example, page 25, line 18 through page 26, line 10.

#### ***Response to Arguments***

8. Applicant's arguments filed June 19, 2003 have been fully considered but are not found persuasive. The examiner's rationale is set forth below.

9. Applicants argue that the reactor of Atkins is "a reactor for analyzing catalytic reaction products by the REMPI method and is not a reactor for preparing a materials library" and as such does not read on the instant claims (Response, page 6). The examiner respectfully disagrees. The reference clearly discloses catalyst libraries. As stated in the rejection, the reference specifically discloses liquid phase reaction mixtures (see, page 7, lines 8-13, Fig 28A and page 28, lines 13-20, for example) to create the catalyst libraries. This reads directly on the limitation of spatially introducing the reaction mixtures in the form of solutions or suspensions into microreaction chambers. There are no other specific preparation limitations in the instant claims.

10. Applicant then argues that the reference does not disclose reaction conditions of temperatures of up to 1000°C and internal pressures of up to 1000 bar. First, since the instant claim recites “temperatures of up to 1000°C and internal pressures of up to 1000 bar” (emphasis added), this clearly includes room temperature and pressure. Thus an experiment carried out at ambient conditions would read on the claim. Moreover, **importantly**, Atkins does indeed teach specific temperatures and pressures reading on those of the claim; see page 27, lines 4-14, especially lines 9-10 and 11-12. See also specific example beginning on page 24, line 30 of the reference where temperatures and pressures within those of the instant claims are also disclosed.

11. For these reasons and the reasons of record, the rejection under 35 U.S.C. 102(e) is maintained.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were

made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-4, 6-9, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atkins et al, as set forth above, in view of Hajduk et al (US 6,371,640).

The teachings of Atkins et al are set forth *supra*. The reference teaches a materials library, specifically a catalyst library and reactors for making such libraries that read on those claimed.

Atkins et al lacks the specific teaching of using X-ray diffraction for the characterization of the materials library.

However, the use of such techniques was well established in the art at the time of filing, as evidenced by the teachings of Hajduk et al. The reference teaches an apparatus for characterizing a library of materials using an x-ray beam directed at the library (see Abstract). X-ray diffraction is a standard materials characterization technique and the advantages of such are well known (see Hajduk et al, column 2, lines 5-28). The apparatus of Hajduk et al is discussed in columns 2-3 of the reference and a plate used for analysis of a library is clearly disclosed (see, for example, Figure 3).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to use the plate of Hajduk et al for the analysis of a library as prepared by Atkins et al (i.e. plate used for x-ray analysis as the “reactor bottom plate”). One of ordinary skill would have been motivated to do so due in order to test a large number of samples via x-ray diffraction, an art standard materials characterization technique.

### ***Response to Arguments***

15. Applicant’s arguments filed June 19, 2003 have been fully considered but are not found persuasive. The examiner’s rationale is set forth below.

16. Applicants argue that since Atkins only teaches REMPI analysis, one of ordinary skill would not use any other techniques to characterize their libraries. Applicant also characterizes this as a “teaching away” (Response, page 7). First, the mere fact that the reference does not mention other analytical techniques is **not** a teaching away. Second, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).



17. Also, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

18. The examiner's position is that the use of X-ray diffraction for the characterization of materials libraries was an art established technique as evidenced by Hajduk et al and thus is within the knowledge generally available to one of ordinary skill in the art. Hajduk et al teaches the advantages of this technique (see column 2, lines 5-28). Note that the strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In re Sernaker*, 702 F.2d 989, 994-95, 217 USPQ 1, 5-6 (Fed. Cir. 1983).

19. Applicant also argues that the "Atkins reactor system would be incompatible with a Hajduk X-ray analysis" due to the cover shown in Figure 24 of Atkins. However, Figure 24 shows only "another embodiment of an array". In other words, this is only one embodiment of the arrays of Atkins. There are clearly arrays disclosed by Atkins that could be easily analyzed by X-ray diffraction.

20. Thus, for these reasons and the reasons of record, the rejection under 35 U.S.C. 103(a) is maintained.

***New Rejections – Necessitated by Amendment  
Claim Rejections - 35 USC § 112***

21. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

22. Claims 2 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 2 recites “are introduced into isolated cavities that are part of the reaction plate and that are realized as borings”. This phrase is indefinite as it is completely unclear what is meant. The phrase “realized as borings” is especially unclear and confusing. Are the isolated cavities the microreaction chambers? What are the “borings”?

B. Claim 9 recites that X-ray diffraction “is employed to investigate the materials library”. This is indefinite and confusing as there is no previous mention of an investigation method in the claims on which claim 9 depends. The claimed method is drawn to a method for preparation; thus the recitation of a investigation method in claim 9 is confusing.

*Status of Claims/Conclusion*

23. No claims are allowed.

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurie Garcia Baker, Ph.D. whose telephone number is (703) 308-0065. The examiner is on an increased flextime schedule but can normally be reached on Monday-Thursday and alternate Fridays from 9:30 to 7:00.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang, can be reached at (703) 306-3217. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Maurie Garcia Baker, Ph.D.  
September 4, 2003

A handwritten signature in black ink, appearing to be 'MG' followed by a long horizontal stroke.

**MAURIE GARCIA BAKER PH.D**  
**PRIMARY EXAMINER**